

# Thermocapillary and Multicomponent Stability Maps in various Parameter Spaces

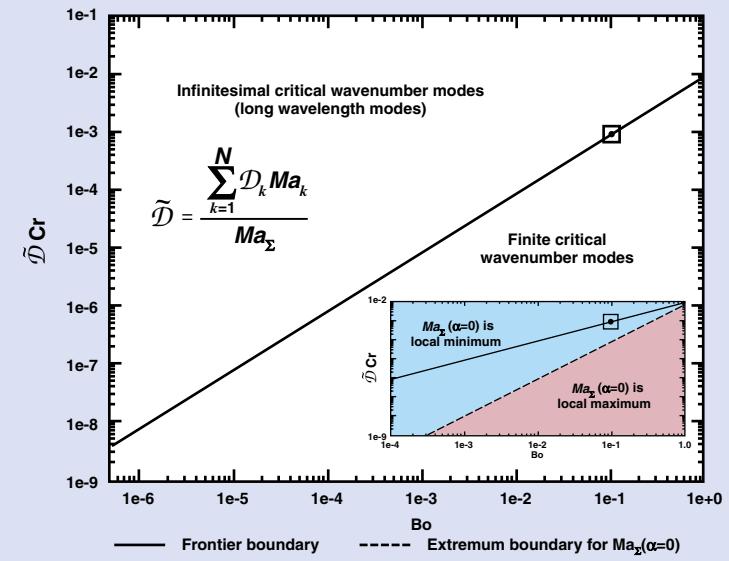


Figure 4.—Frontier point boundaries in  $(Bo, \tilde{D} Cr)$  space. The dashed line in the insert is the extremum boundary for  $Ma_2(\alpha=0)$ . Above the dashed line,  $Ma_2(\alpha=0)$ , is a local minimum, below this line is a local maximum. Skarda and McCaughan, Intl. J. Ht. and Mass Transfer, 1998.

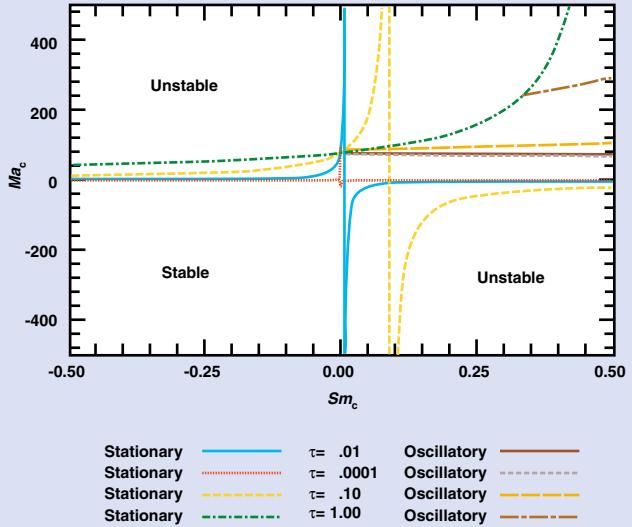


Figure 5.—Effect of diffusivity ratio,  $t$ , on stability maps in  $(Sm_c, Ma_c)$  space.  $\Delta C$  is induced by applied  $\Delta T$ . Oscillatory instability occurs above the oscillatory boundaries in the upper right-hand quadrant. Skarda et. al. JFM, 1998.

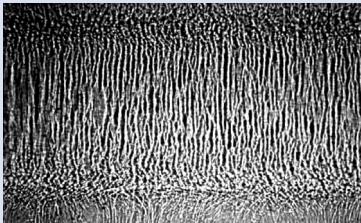


Figure 1.—Salt Finger Formation, photo courtesy of Professor C.F. Chen, 1998.

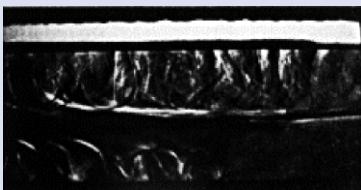


Figure 2.—Onset double-diffusive instability, Tanny, Chen, Chen, 1995, JFM vol 303.

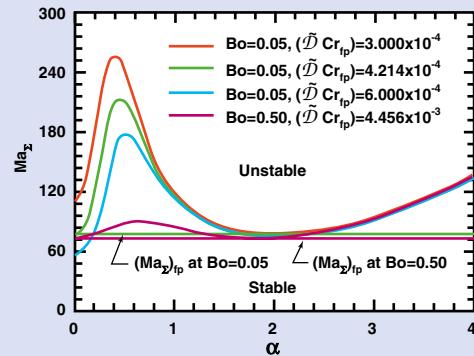


Figure 3.—Stationary stability boundaries for different values of  $Bo$  and  $(\tilde{D} Cr_{ip})$ . Two curves shown are taken at frontier points associated with  $Bo$  values of 0.05 and 0.50. Skarda and McCaughan, Intl. J. Ht. and Mass Transfer, 1998.

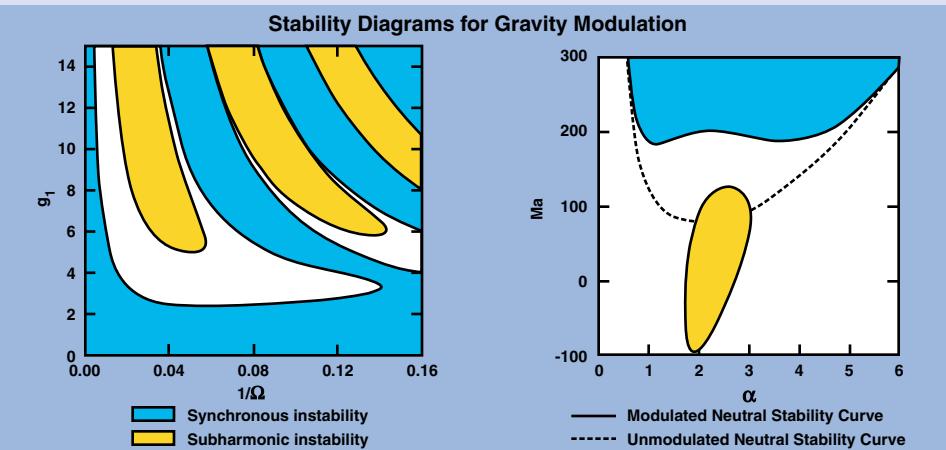


Figure 6.—Stability boundaries in  $(1/\Omega, g_1)$  space for  $\alpha=2$ ,  $Ra=1000$ ,  $Ma=118.77$ ,  $Pr=1$ ,  $g_0=0$ .

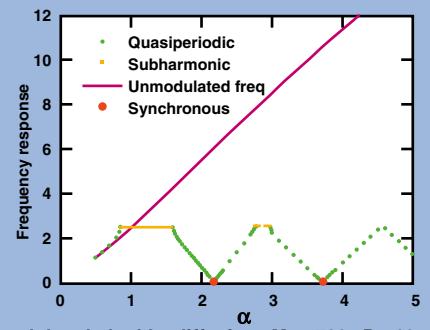
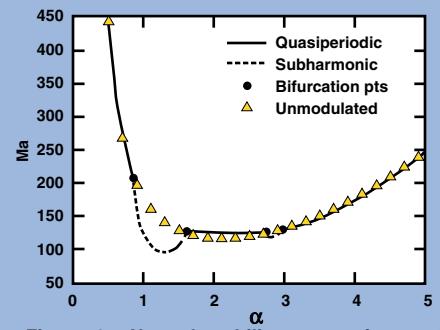


Figure 8.—Neutral stability curves for gravity modulated double diffusion.  $Ms=-700$ ,  $Pr=10$ ,  $\mathcal{D}_{22}=0.1$ ,  $Ra=1000$ ,  $g_0=1$ ,  $\Omega=5$ . Skarda, NASA/TM-1998-207941/AIAA-98-2599.